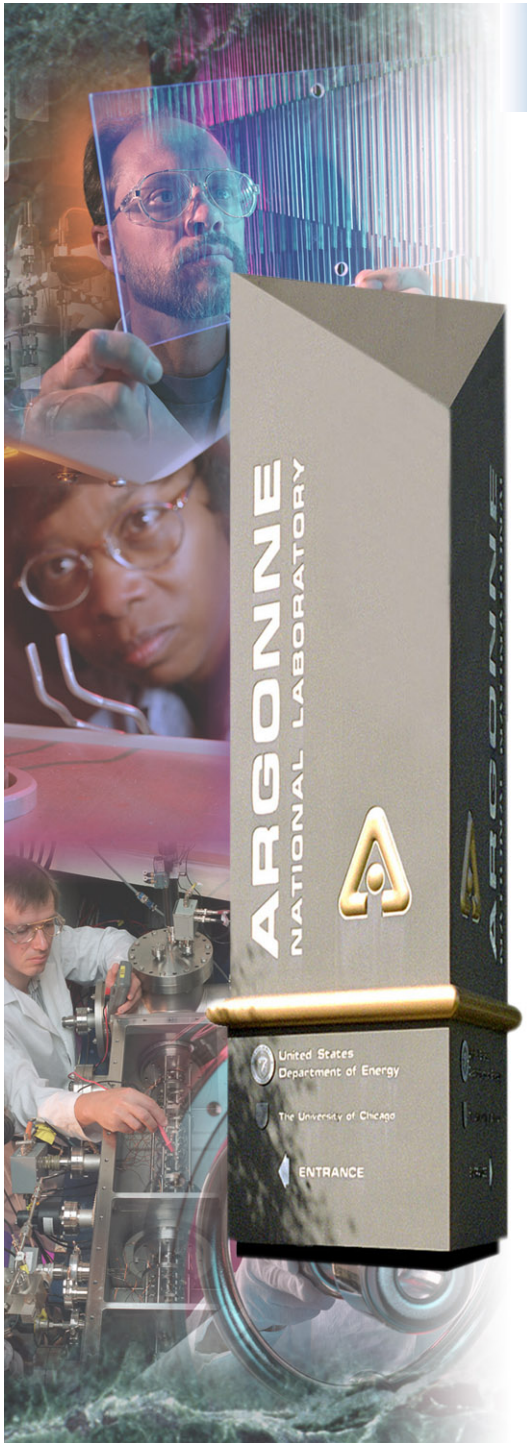

ARGONNE NATIONAL LABORATORY

Proposal Number **432**

Replacement of the GEN-2 PSS at the 4-ID beamline with a GEN-3 PSS

Presenter name

Date

THE UNIVERSITY OF CHICAGO

Office of Science
U.S. DEPARTMENT OF ENERGY

Argonne National Laboratory is managed by
The University of Chicago for the U.S. Department of Energy

Replacement of the GEN-2 PSS at the 4-ID beamline with a GEN-3 PSS

Objective: To replace the GEN-2 PSS located at the 4-ID beamline with a GEN-3 PSS

Background Information:

- New Initiative
- Single Year Funding
- High priority

Justification:

Replacing a one-of-a-kind PSS, which consists of several unique and aging hardware and software products with a state-of-the-art modern Personnel Safety System (GEN-3). Since its commissioning in 1999, the GEN-2 PSS has had only one full time ANL employee familiar enough with the system to expeditiously support it (i.e. the designer). Thus doing this upgrade will improve reliability and increase availability of trained personnel. The GEN-2 PSS consists of five (5) Windows NT based computers. These computers, purchased in 1998, contain moving parts such as hard-drives and fans, which can and have failed and is reliability concern. Should the software products used on these computers require any upgrades, licensing agreements would have to be reinstated at a cost of as much as $10K per computer.

Consequence:

Long term, because of unique/aging hardware/software products and lack of trained personnel to support it, this system will eventually cause unwanted beamline downtime.

Requested Funds (FY06): $139.88 K (Operating)

Replacement of the GEN-2 PSS at the 4-ID beamline with a GEN-3 PSS

Facility Risk:

This proposed upgrade will have no impact on facility or beamline operations since the installation and testing will be completely implemented and validated during one of the three planned shutdown periods.

Cost Benefit:

By completing this upgrade project the APS and the beamline will have the latest PSS equipment with engineering/technician support from the entire SI staff. There will be much less spare parts inventory of unique GEN-2 components. Validation time will be reduced by ½ to 1/3.

Brief Description of work:

- Procure all GEN-3 PSS hardware
- Pre-assemble Station enclosures in SI technicians lab in 401
- Pre-assemble as many subassemblies as possible to be installed in the PSS Mezzanine rack
- Removal of all GEN-2 PSS hardware except for field devices, associated wiring and power supplies
- Pull some new cabling including updated PLC communication cables
- Install a complete GEN-3 PSS with components which will require little or no additional space
- Install software and perform initial verification
- Validate hardware, software and system

Replacement of the GEN-2 PSS at the 4-ID beamline with a GEN-3 PSS COSTS

FY	2006	2007	2008	Total
Non-effort	$139.88 K			$139.88 K
Existing Effort	$192.03 K			$192.03 K
New Effort				
Total	$331.91 K			$331.91 K

Replacement of the GEN-2 PSS at the 4-ID beamline with a GEN-3 PSS
PROPOSED SCHEDULE

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Design and Procurement						
Drafting						
Fabrication of subassemblies						
Fabrication of assemblies						All
Remove existing hardware						**During**
Install new hardware						**Normal**
Install and validate system						**Shut-**
						Down